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JOINT THEATER MISSILE DEFENSE STRATEGY:

SOME OPERATIONAL CONSIDERATIONS

Core Course V Essay

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Core Course V  
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## Introduction

Theater ballistic missile defenses were used operationally for the first time during Operation Desert Storm in response to Iraqi Scud missile attacks against Saudi Arabia and Israel. At that time, since no joint doctrine for Theater Missile Defense (TMD) employment existed, the Commander in Chief (CINC) decided what would be protected and how best to employ limited TMD assets. It became apparent rather soon in the conflict that TMD was a joint mission. Not only were Army Patriot missiles employed on the ground, but Air Force fighters flew thousands of sorties in search and attack operations against mobile Scud launchers, Air Force Defense Support Program (DSP) satellites provided important warning and cuing information, and Navy Aegis-equipped ships also tracked the flight of enemy ballistic missiles.

The purpose of this essay is to examine the role of theater ballistic missile defense in U.S. theater, or operational, strategy. At the time of this writing, there exists in draft form a Doctrine for Joint Theater Missile Defense,<sup>1</sup> which attempts to set forth doctrine governing joint TMD activities; consequently, much attention is paid to this draft document in this analysis. What this essay tries to do is go one step beyond doctrine to examine the considerations (or strategy) necessary for employing TMD during the various operational phases of conflict. While focusing primarily at the operational level, some background is presented on the role of TMD in U.S. National Military Strategy, though this is amply covered elsewhere.<sup>2</sup>

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<sup>1</sup> Joint Chiefs of Staff, Doctrine for Joint Theater Missile Defense (Joint Pub 3-01.5), proposed pub, December 1993. Hereafter referred to as Joint Pub 3-01.5.

<sup>2</sup> See Secretary of Defense Les Aspin, Annual Report to the President and the Congress, (Washington, D.C.: U.S. Department of Defense, January 1994), pp. 51-56; Ballistic Missile Defense Organization, 1993 Report to Congress on the Theater Missile Defense Initiative (Washington, D.C.: U.S. Department of Defense, 1993); and Dennis McDowell, "Theater Missile Defense: A Joint Enterprise," Joint Forces Quarterly, Winter 1993-94, pp. 80-87.

As defined in Draft Joint Pub 3-01.5, Joint Theater Missile Defense (JTMD) is composed of four integrated operations:

**Passive missile defense**, those individual and collective measures taken to posture the force to minimize the effects of a Theater Missile (TM) attack; **active missile defense**, measures taken to intercept, destroy and or negate the effects of TMs after launch; **attack operations**, those actions taken to neutralize or destroy an adversary's ability to produce, deploy, and employ TMs; and **command, control, communications, computers, and Intelligence (C4I)** to coordinate and integrate the joint force component capabilities to conduct passive defense, active defense, and attack operations.

Also in the same document, the term "Theater Missile" is applied to ballistic missiles, air-to-surface missiles, and air-, land-, and sea-launched cruise missiles whose targets are within a given theater of operation. For the sake of analysis -- and in no way underestimating the importance of other threats -- this paper deals exclusively with the ballistic missile threat which, according to Joint Pub 3-01.5, is of primary concern. Moreover, this analysis focuses primarily on the active defense component of joint TMD operations.

### **The Role of Theater Missile Defense in U.S. National Military Strategy**

The end of the Cold War epoch brought with it a shift in United States defense planning from a focus on the global threat posed by the Soviet Union to a concern about regional threats and challenges. According to former Secretary of Defense Les Aspin, "with the demise of the Soviet Union, threats to stability in key regions throughout the world have become America's principal military concern and a major determinant of our defense budget priorities."<sup>3</sup>

Though a U.S. National Military Strategy has yet to be promulgated, draft documents reveal a regional defense strategy similar to that which was introduced in the January 1992 National Military

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<sup>3</sup> Prepared statement of Secretary of Defense Les Aspin to the House Armed Services Committee, March 30, 1993.

Strategy of the United States. To achieve U.S. military objectives, the armed forces of the United States will rely on *deterrence, warfighting, and military support operations*. In maintaining a strong defense capability, U.S. forces must be able to:<sup>4</sup>

- Credibly deter and defeat aggression in two major regional contingencies that occur nearly simultaneously;
- Maintain an overseas presence that includes permanently stationed forces combined with exercises, port calls, and other demonstrations of U.S. determination to defend U.S. interests;
- Deter and prevent the use of weapons of mass destruction and their delivery systems; and
- Support peace enforcement and other missions such as counter-terrorism and disaster assistance.

Theater missile defenses will play a key role in implementing this new defense strategy. In terms of overseas presence, U.S. forces increasingly will be stationed in regions where potential adversaries will possess theater ballistic missiles. In support of our overseas presence on the ground, theater missile defense systems, operating in concert with early warning systems, can provide limited-area and wide-area defense against theater ballistic missiles for forward-deployed and expeditionary forces. Defenses could provide protection for U.S. host nation forces, military bases, ports and airfields used by arriving forces, and population centers. Similar protection could be afforded U.S. and allied forces operating abroad in support of peace enforcement and humanitarian missions. Finally, TMD could contribute to the deterrent mission of forward deployed U.S. forces by reducing the vulnerability of U.S. forces to ballistic missile attack and by countering the threat of use, or actual use, of ballistic missiles armed with weapons of mass destruction.

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<sup>4</sup> Based on a March 1994 unclassified briefing entitled, "The National Security Strategy of the United States," prepared by the strategy division of The Joint Staff.

The ability to respond to aggression in two major regional contingencies that occur nearly simultaneously will depend on U.S. warfighting capabilities and the ability to get them in-theater. This element of U.S. defense strategy requires the U.S. to maintain highly ready and rapidly deployable power projection forces capable of handling regional contingencies that vary across the spectrum of size and intensity. Of particular interest to this analysis is the Administration's judgement, made in the Bottom-Up Review, that potential regional aggressors are expected to be capable of fielding some 100 to 1,000 Scud-class ballistic missiles, some possibly with nuclear, chemical, or biological warheads.<sup>5</sup> The Department of Defense (DoD) notes that today more than 15 nations have ballistic missiles; by the year 2000, perhaps 20 nations may have them.<sup>6</sup>

The Gulf War demonstrated the political and military importance of possessing a capability to protect against the threatened or actual use of ballistic missiles and weapons of mass destruction. Deploying theater ballistic missile defenses to protect against this threat will reduce pressures on U.S. military and political leaders to alter campaign plans because of the threat or use of ballistic missiles, and may also be an important element in maintaining coalition solidarity.<sup>7</sup>

### **The Role of JTMD In Theater Military Strategy**

To begin with some general considerations, it is important to recognize that:

- 1) Theater Ballistic Missiles (TBM) may be as much a political weapon as a military instrument -- in many

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<sup>5</sup> Les Aspin, The Bottom-Up Review: Forces For A New Era, U.S. Department of Defense, September 1, 1993.

<sup>6</sup> Les Aspin, Annual Report to the President and the Congress, *op.cit.*, p. 51.

<sup>7</sup> According to former Secretary of Defense Aspin, "The United States cannot accept a situation in which the threat or use of ballistic missiles armed with WMD constrain its ability to project military forces to meet commitments abroad and achieve national security objectives. U.S. forces, once deployed, must have TMD defense capabilities to deal effectively with ballistic missile threats." *Ibid.*, p. 53.

cases, their political impact may outweigh their military significance; 2) Given U.S. global interests, TMD forces must be rapidly deployable or employable from the United States, forward bases, and/or ships, while the C4I necessary to support them must be flexible enough to provide timely support in any region; 3) The increasing range of potential enemy TBM is such that a CINC may have to consider TBM operations outside his immediate theater of operations; and 4) U.S. forces may have to fight their way into a hostile area where protection against TBM attack is not already in position.

### JTMD OBJECTIVES

What is it that a CINC would want to accomplish through the employment of TMD? During the pre-hostilities stage, TMD could act as a deterrent by demonstrating U.S. resolve. The recent shipment of a Patriot battery to South Korea is a good example. Should conflict be unavoidable, TMD could be used to 1) protect deployed U.S. and coalition forces, critical assets, and areas of vital interest from attack by TMs; 2) detect and target TM platforms; 3) detect, warn and report TM launches; 4) coordinate a multi-faceted response to a TM attack, integrating that attack with other combat operations; 5) reduce the probability of and/or minimize the effects of damage caused by a TM attack; and 6) ensure that the Joint Force Commander has the freedom to conduct joint operations without undue interference from TM operations conducted by the enemy.<sup>8</sup>

### ORGANIZATION FOR JTMD<sup>9</sup>

By way of summary, it is the responsibility of the Theater Combatant Commander to ensure that

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<sup>8</sup> Most of these are laid out in Joint Pub 3-01.5, Chapter I, Section 2.

<sup>9</sup> This section is summarized from Joint Pub 3-01.5, Chapter II, Section B, which goes into the responsibilities and command relationships for JTMD.

JTMD plans and operations of subordinate forces are integrated at theater level. The Joint Forces Commander (JFC) is responsible for joint planning; prioritization of missions and targets; coordination, deconfliction and execution of JTMD operations; friendly asset protection; and apportionment and allocation of resources. The JFC concept of operations (CONOPS) should include prioritization of critical assets which should be protected with limited JTMD resources. The Area Air Defense Commander (AADC) is responsible for all air defense operations, to include the development and execution of detailed TMD plans. The JFC normally assigns the responsibilities of the AADC to the JFACC, who executes attack operations against TMs by integrating and directing the employment of counterair, strategic attack, and interdiction assets.

### **The Theater Missile Threat**

As stated above, theater ballistic missiles can pose a political threat by threatening to disrupt or unsettle a coalition. Militarily, "TMs could be used throughout the conflict against tactical, operational, and strategic targets to disrupt offenses, defenses, and their support and to reduce friendly military capabilities."<sup>10</sup> Categories of military and political targets could include the following:

#### **Military**

- Interdiction of lines of communication
- Attacks on logistical facilities (ports, air based, marshalling areas, etc...)
- Counter-TMD activity
- Countervalue attacks on population centers.
- Key choke points

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<sup>10</sup> Joint Pub 3-01.5



### Political

- Civilian population centers
- Political, cultural, and religious structures
- Countervalue attacks against non-coalition members
- Propaganda value in attacking concentrations of US and multinational military forces, separate and apart from any military significance, in order to show vulnerability of these forces to attack (e.g. rest and recreation areas and rear support areas).

### Targeting and Employment Limitations

For the most part, current regional TBM powers operate under targeting and employment constraints that will impact targeting choices. Such limitations may make it easier for a theater CINC to narrow down his choices of what may require TMD protection. For example, TBMs can be limited by range, poor accuracy, low daily sortie rates, and lack of reconnaissance and battle damage assessment. Assessment of enemy TBM capabilities could lead to a number of conclusions affecting TMD deployment decisions. For instance, poor accuracy may mean that hardened targets can forgo defenses; range limitations can put certain targets out of reach; and lack of reconnaissance may lessen the risk of TBM attack against mobile forces and assets.

*Specific targets for theater ballistic missiles might include the following:*

Air defense artillery sites Command and control elements Communication nodes Aircraft facilities Seaports and harbors Logistic centers Key civilian facilities such as power and water plants.	Nuclear delivery systems/storage sites Naval vessels/fleet operating areas Ground maneuver forces Amphibious objective areas Population centers Industrial complexes Merchant shipping Key terrain choke points
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## Considerations by Operational Phase<sup>11</sup>

Bearing in mind the objectives for JTMD and the potential friendly assets vulnerable to enemy TBM attack, this section looks at the factors a theater TBM planner would have to consider when allocating limited TMD assets.<sup>12</sup>

### Pre-hostilities

During periods of heightened regional tension or crisis, U.S. forces may be called upon to deter potential aggression while reassuring friends and allies. This may require a demonstration of force, such as joint exercises, moving land, air, or sea forces into the area and, as we have seen recently in South Korea, the deployment of theater ballistic missile defenses. In some instances, U.S. TMD deployments would be welcome and would proceed in the context of alliance or coalition agreements. In this case, ground based systems could be moved into place as a visible sign of U.S. commitment. Under different circumstances, U.S. ground forces deployments may not be welcome, or the U.S. may not wish to make its deployment obtrusive for fear of exacerbating the crisis. In this case, an off shore TMD capability would be preferable. In any event, for those crises in which the possibility of ballistic missile use is present, the availability of a TMD capability would give a theater commander greater flexibility in deploying and employing his forces -- whether already present in-theater, or poised to react to imminent

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<sup>11</sup> These four phases of combat operations are laid out in Les Aspin, Annual Report to the President and the Congress, *op.cit.*, pp. 13-15. Joint Pub 3-0, Doctrine for Joint Operations (September 1993) identify the phases as prehostilities, lodgement, decisive combat, and follow-through.

<sup>12</sup> By the end of this decade, active defense assets could include 9 advanced capability Patriot battalions (6 batteries per battalion, with 8 launchers per battery); 2 Theater High Altitude Area Defense (THAAD) batteries (operational prototypes); and perhaps 1 sea-based TMD system based on an Aegis-equipped cruiser. By way of comparison, the advanced-capability Patriots can defended four times the area of the Patriot employed during the Gulf War, while THAAD increases the defensive area by ten-fold. The sea-based system will be slightly better than the advanced capability Patriot.

hostilities. The Patriot battalion being sent to South Korea is a perfect example: half of the force will be positioned to protect U.S. deployed forces, while the remaining Patriots will protect our major reinforcement area, the port city of Pusan.

## **Phase I: Halt the Invasion**

### *Situation*

Where feasible, the highest priority in defending against an attack is to minimize the territory and strategic facilities that can be captured by the invader. This permits the invaded country to continue to play a role in the collective effort to defeat the aggressor and reduces the effort necessary to repel the invasion. The primary responsibility for the initial defense will rest with indigenous forces. In some instances, U.S. forces will be stationed in or near the theater of operations, and will move to assist the defenders. The bulk of U.S. forces, however, will have to come from the United States in most cases.

### *Ballistic Missile Threats*

Depending on the type, range and accuracy of ballistic missiles possessed by the attacker, his targets may be primarily civilian-political -- to demoralize the will of the defender and disrupt the coalition - and/or military to support his offensive. This latter category of targets include air defense assets, air bases, aircraft on the ground, command control and communications nodes, troop marshalling areas, and logistics facilities. Chemical warheads may be employed against troop concentrations or airfields. Ballistic missile attacks can be particularly useful in degrading a defender's anti-aircraft capability, permitting the aggressor's air force to gain early command of the skies. In some instances the aggressor may hold his limited number of ballistic missiles in reserve. Additionally, an aggressor may consider

ballistic missile attacks outside the theater of operations as a deterrent against external involvement in the conflict.

### *TMD Priorities and Capabilities*

If U.S. forces are not forward deployed in theater, the only TMD assets available will be offshore or ground-based in nearby theaters. Assuming naval TMD assets are in range, protection can be afforded to allied population centers and forces under ballistic missile attack. Depending on the scenario, priority might be given to local population, the local national command authority (or capital city), and areas where U.S. reinforcements would arrive (i.e, air and sea ports). Attack operations against TBM launchers could be conducted by sea-based air located off-shore or land-based fighters located in nearby theaters.

If U.S. forces are already deployed in the combat theater, defending U.S. forces would become a central priority. With limited TMD assets, a commander will have a difficult time prioritizing assets to be defended, sometimes making a choice between protecting local population and his own forces. With inaccurate TBMs, however, it is more likely they will be used against civilian targets, for they would be less effective against military forces. TMD attack operations will have to be weighed against other uses of airpower such as direct attacks on advancing enemy forces, C3I nodes, and enemy air defenses. Finally, passive measures could be taken to reduce the vulnerability of in-place U.S. forces to TBM attack.

## **Phase 2: Building Up U.S. Combat Power While Reducing the Enemy's**

### *Situation*

Once the enemy attack has been halted, the United States and its allies will focus on building up

its combat and logistics capability while reducing the enemy's capacity and will to fight. As more land, air and sea forces arrive from the United States and other allied nations, the emphasis would shift to isolating enemy ground forces and destroying them, destroying enemy air and naval forces and their logistics, and attacking targets in the enemy's rear. Meanwhile, the U.S. or coalition would begin preparations for a counteroffensive.

### *TBM Threats*

During this phase of operations enemy TBMs may be used to thwart U.S. and allied reinforcement by attacking ports and air bases. TBM attacks could also be expected against troop marshalling areas as well as rear-areas. TBMs would be used to break the will of the defender by inflicting casualties that would otherwise not be possible due to U.S. air and ground strength in the theater. The most effective use of TBMs, however, may be in attacking the political cohesion of the alliance or coalition arrayed against the aggressor. Depending on the range of enemy TBMs, they may also be employed against targets outside the theater of operations in order to widen the conflict or disrupt the coalition. This was Iraq's intent when it fired Scuds against Israel. Had Saddam possessed the Chinese CSS-2 (now deployed in Saudi Arabia) he would have been able to attack targets in Europe. It is difficult to predict what effect this would have had on the allied coalition poised against Iraq.

### *TBM Priorities and Capabilities*

If an extended period of time (measured in months) is necessary for a build-up, a high priority should be placed on protecting the political cohesion of the coalition or alliance. This may require TMD deployments to other theaters that are vulnerable to TBM attack. Protection of civilian population and

infrastructure becomes important as the defending coalition buys time in which to mount a counteroffensive. The next priority should be protection of theater reinforcement areas and lines of communication. With the build-up of air forces in theater, attack operations against TBMs can increase, allowing active TMD assets to protect high-priority assets. Mobile ground-based TMD assets such as Patriot and THAAD should now be available to protect in-land areas that were previously out of sea-based TMD range. Sea-based TMD would then be free to move to other theaters. Highly integrated communications between surveillance and warning assets, active defenses, and attack operations (i.e., cooperative engagement) should be available to contribute to the TMD mission during this phase, if not available earlier. Special operations forces may also be available to target and destroy enemy TBM launchers behind enemy lines.

### **Phase 3: Defeat the Enemy**

#### *Situation*

During this phase, the U.S. and allied forces would mount a large-scale air-land-sea counteroffensive to defeat the enemy and destroy his war-making capability, retake territory, and achieve other strategic or operational objectives. This may include amphibious assault landings in the enemy's rear.

#### *TBM Threat*

By this time, allied TMD operations should have succeeded in degrading the enemy TBM threat. Most likely, the few remaining TBM assets are hidden and will be used against "strategic" targets, in continuing efforts to disrupt the coalition through attacks against population or other political, economic or

religious targets. Again, depending on circumstances, the enemy may be withholding TBM fires in anticipation of the counteroffensive, and will utilize these weapons in an attempt to halt the ground advance, channel the attack into more defensive positions, repel an amphibious assault, or disrupt the coalition's ability to sustain the counteroffensive. Facing imminent defeat, an enemy may also be prompted to employ weapons of mass destruction on his TBMs, if feasible.

### ***TBM Priorities and Capabilities***

As the emphasis shifts to offensive operations, the availability of aircraft for TMD attack operations may decline, placing a greater burden on active defenses. As the front line advances, TBM coverage will have to support the advance. In the event of an amphibious operation, sea-based TMD will again play an important role. Given the vulnerability of forces during amphibious operations, the amphibious objective area and supporting fleet operations area need to be TMD priorities. TMD protection for air bases may also be a priority as the enemy tries to mitigate allied air superiority by disrupting air-base operations.

## **Phase 4: Provide Post-War Stability**

### ***Situation***

Following an allied victory, military forces would remain in theater to ensure compliance with peace accords or cease-fire agreements and assist in reestablishing friendly governments in liberated areas. As in the case of Iraq, this may require a sustained presence with the not unlikely prospect of small-scale hostilities.

### *Threat*

With the enemy's will broken and his armies destroyed, there is little likelihood of enemy TBM action against military targets. A terrorist threat or threat of retribution against a political target, however, should not be ruled out, unless allied forces maintain complete control over enemy territory.

### *Priorities and Capabilities*

Protection of population centers and other vital assets within enemy TBM range would be prudent until the threat is determined to be nil. Ground-based active TMD units can be redeployed to protect these areas. Surveillance and warning systems also should be kept in place.

## **CONCLUSION: CONSIDERATIONS FOR JOINT TMD OPERATIONS**

It will become immediately apparent to any prospective theater TMD planner that the number of assets to be defended -- both within and outside the theater -- will far exceed the active TMD capabilities projected for the next 10 to 15 years (and this is for only one MRC, let alone multiple contingencies). It is also clear that given the uncertainty of both the TMD threat and the context in which it will appear, the TMD mission will have to rely on joint force capabilities and draw upon the synergistic effect of integrated active and passive defenses, attack operations, and C4I.

Serious choices will have to be made between protecting "political assets" (i.e., cities and infrastructure), which might be a prerequisite for maintaining alliance or coalition solidarity, and the protection of U.S. (and allied) deployed forces and the ability of the U.S./coalition to gain access to the theater of operations. In the case of South Korea, the U.S. CINC chose the latter set. While the choice of what to defend may vary according to operational phase, active TMD capabilities must be reserved to



defend critical assets (center of gravity), while accepting the risk that the enemy may attack lower priority assets which are not directly defended.<sup>13</sup>

One way to make the most out of limited active defense assets is to develop and deploy land, air, and sea-based ballistic missile defense systems that share the ability to detect, track and control missiles. One example, recently used by Adm. William Owens, Vice Chairman of the Joint Chiefs of Staff, is to deploy land-based acquisition and fire control radar in-theater, which would then control missile interceptors fired off shore by sea-based platforms. Not only would this extend the range of sea-based missile defenses, which are limited by the line-of-sight radar aboard Aegis ships, but this would also ease early demands on airlift by obviating the need for land-based launchers and missiles.<sup>14</sup> Likewise, sea-based radars could pass acquisition and tracking information to land-based systems already in place.

In the final analysis, as long as U.S. national military strategy calls for forward deployed U.S. forces and the ability to respond to regional crises, there will be an important role for theater missile defenses. To be sure, the ballistic missile threat will only intensify as countries develop longer-range missiles, with greater accuracy, and capable of delivering weapons of mass destruction. As our recent experience in the Gulf War demonstrates, an effective TMD capability will have to integrate land, sea, and air assets operating under joint doctrine. Despite the requirement for joint doctrine, however, the strategy for employing TMD in a particular contingency will rest with the theater commander, who will have to wrestle with the considerations only briefly touched upon in this analysis.

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<sup>13</sup> This was also recommended in Joint Pub 3-01.5.

<sup>14</sup> William A. Owens, "Living Jointness," Joint Forces Quarterly, Winter 1993-94, pp. 11-12.